What is claimed is:

1. A method of enhancement of electrical conductivity for conductive polymer by use of field effect control comprises of the following steps:

   (a) On a substrate surface was subjected to a microwave plasma field treatment to facilitate the conductive polymer monomer, dimer, oligmer or polymer be positional absorbed;

   (b) A precise coating method by applying a field functional control is on the surface of substrate treated by microwave plasma field was homogeneously coated by a conductive polymer solution to form a positional order stacking molecular structure for a conductive polymer film;

   (c) Employing a molecular structure ordered field control and a self-stacking field control during the coating process it was subjected to an electromagnetic combination field to maintain and to strengthen the position and orientation ordered and stacking molecular structure of conductive polymer.

   Through the procedures described above it obtains to control and to increase the electrical conductivity for conductive polymer.

2. A method of enhancement of electrical conductivity for conductive polymer by use of field effect control of claim 1 wherein said the conductive polymer can be selected from polyaniline, polypyrrole, and polythiophene, among them polyaniline is the best, this polyaniline structural composition comprises of aniline, oxidant, and doping agent.

3. A substrate surface treated by a microwave plasma field of claim 1 (a) wherein said the power of this microwave field is >1 watts, the current of electrical field is >0.1 amperes, and the magnetic field is >500 gauss.
4. A substrate surface treated by a microwave plasma field of claim 1 (a) wherein said the excited plasma gas is oxygen, argon, hydrogen, carbon tetrafluoride, and other activated gas.
5. A precise coating engineering with field functional control of claim 1 (b) wherein said the field is microwave field, electrical field, magnetic field, and fluid force field individually, or two combination, or three combination, or total combination mechanism function.
6. A precise coating engineering with field functional control of claim 1 (b) wherein said the precise coating engineering is a containing electrical field, magnetic field, and fluid force field combinational field function coating tool and coating control system, the coating thickness is in the range of 100Å ~ 100 ì m.
7. A molecular structure sequential ordered and a self-stacking field control of claim 1 (c) wherein said the field control is the combination of electrical field and magnetic field, or a combination of electrical field, magnetic field, and fluid force field.
8. The structural composition of polyaniline of claim 2 wherein said the aniline can be selected from substituted alkyl, alkoxy, aryl, hydroxyl, amino, or halogen with a hydrogen atom or more hydrogen atoms on aniline, e.g. 2- and 2,5-substituted methyl anilines, 2- and 2,5-substituted ethyl or propyl anilines, 2-substituted methoxy or

ethoxy anilines, 4-phenyl substituted anilines, 2-chloro, 2-fluoro substituted anilines, 2- and 4-amino substituted anilines, and 2- and 4-hydroxyl substituted anilines. Hydrogen atoms on the nitrogen position on aniline can also be substituted by methyl, propyl, butyl, and phenyl group, i.e. N-methyl, N-propyl, N-butyl, and N-phenyl substituted anilines.

9. The structural composition of polyaniline of claim 2 wherein said the oxidant can be selected from potassium bichromate, ammonium persulfate, hydrogen peroxide, ceric sulfate, and chromic chloride.

10. The structural composition of polyaniline of claim 2 wherein said the blending agent can be selected from a series of aromatic protic acids, e.g. benzenesulfonic acid (BSA), dodecylbenzenesulfonic acid (DBSA), p-toluenesulfonic acid (PTSA), nitrobenzenesulfonic acid, naphthalenesulfonic acid, and 10-camphorsulfonic acid.